Poster Session I: Polyphenols in other diseases

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Glycyrrhiza glabra L. as a promisor candidacidal in biofilms and planktonic cells: comparison between phenolic extract and isolated compounds

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Opportunistic fungal infections, particularly involving *Candida* species (candidiasis) have become a serious problem of public health. Current antifungal agents have been loosing the effectiveness, in part due to their overuse, and appearance of resistant *Candida* species. Plants have been used over years and recommended by natural physicians for multitude of health conditions. The aim of the present study was to evaluate the anti-*Candida* potential of a hydromethanolic extract of rhizomes and roots of *Glycyrrhiza glabra* L. (licorice), in planktonic cells and biofilms, as well as to compare its effect with individual phenolic compounds identified in the extract.

Licorice extract evidenced an antifungal activity against all of the nineteen tested *Candida* strains, including *C. albicans, C. glabrata, C. parapsilosis* and *C. tropicalis* species. The inhibition zones varied between 10-13 mm; MIC and MFC values varied, between 0.375-1.5 and 0.75-3 mg/mL for planktonic cells and biofilms, respectively. Considering the pronounced antifungal activity, a chemical characterization of the extract was conducted, and the main phenolic compounds identified were tested. Flavones (mainly apigenin derivatives), flavanones (mainly liquiritin derivatives), an isoflavone and a chalcone, were the most abundant compounds. However, these compounds were not active neither individually nor combined. Thus, probably synergistic effects among all components in the phenolic pool and/or other compounds present in the extract should be responsible for the observed antifungal activity.

Detailed *in vivo* studies should be performed, not only to evaluate the actual effects in a complete organism, but also the safety of the preparation and bioavailability in systemic infection models.

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Tea of jaboticaba peel has positive effects in model of induced-colitis.

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Polyphenols have antioxidant and anti-inflammatory properties, which can positively act in inflammatory bowel diseases (IBD). A Brazilian source of these compounds is the jaboticaba (Myrciaria jaboticaba), mainly its peel, which contains anthocyanins and other phenolic compounds.

The aim of this work was to evaluate different concentrations (15, 25 and 50 g L^{-1} – T15, T25, and T50, respectively) of aqueous extract (Tea) of jaboticaba peel in oxidative status and macroscopic parameters of inflammation of adult rats with induced colitis using TNBS (2,4,6-trinitrobenzenesulfonic acid).

Diet intake and weight gain were similar when compared to control groups (Healthy- H and Colitis - C), as well as disease score. Tea intake was not altered in T50 in relation to water intake by C group. T50 and T15 showed tendency to increase the weight gain after induction, and they were statistically similar to the H group, which could be explained by the fasting hours before instillation. The ratio between weight and length of colon was 15% lower in T15 related to C, and equivalent to H group. Treatment in T50 reduced 15% lipid peroxidation in colon compared to C group (such as in H group), according to TBARS assay. However, changes in antioxidant status on colon of animals were not found by FRAP test.

These initial results showed that aqueous extract of jaboticaba peel could be a potential adjuvant in IBD management, mainly in concentration of 50 g L^{-1} (125 mg polyphenols kg^{-1} day^{-1}).

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